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THE AMERICAN JOURNAL OF PHOTOGRAPHY

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The Philosophy of the Fuzzygraph.

F. A. WAUGH

WHILE I defend the fuzzygraph I hope that I still may not be convicted of being a fuzzygraphist. My pictures have never been hung in the salons, which is some evidence for the defense. The few of them which have been published were certainlv never mistaken for the works of Steichen or Clarence H. White. Moreover my regular line of photography is technical, anatomical, requiring the last vestige of detail. I am accustomed to experience a feeling of satisfaction as I view a negative rendering the facts microscopically.

And yet I like a good fuzzygraph. A poor one is intolerable of course. Simply throwing a picture out of focus doesn't make it a work of art.

Judging from things I hear said, I feel sure that many people fail to un-

By Dr. Geo. W. Norris.

"Where Nature's Heart beats strong amongst the Hills."

derstand the fuzzygraph. They deride it. Amongst a certain cult it is regarded as smart to say sarcastic things about every picture which loses focus anywhere. On the other hand there are a great many people like myself who admire a good picture with feeling, sentiment, suggestion, tone and atmosphere in it, even if one can't count the leaves on the trees nor the hairs on the cat's back.

It seems to me that there are four positive good qualities which naturally belong to the diffused-focus photograph, — commonly nicknamed the fuzzygraph. These are 1, atmosphere; 2, perspective; 3, composition; 4, suggestion.

It is almost impossible to get any atmosphere into a print from the sharply focused negative. Clouds may be faked in, one way and another, and form a sort of substitute, but the feeling of atmosphere is not there. Almost any means of breaking up detail helps the atmosphere of an ordinary photograph. That is why rough papers are in demand, and why the platinotype and the gum-bichromate print are made. At least that is one of the reasons.

Perspective is thought to be exclusively a matter of mathematics; but in the photograph it is largely a matter of atmosphere, that is a question of diffusion of focus. It is seldom that a picture is so much dominated by straight lines of known direction that the whole depth of the composition may be judged by them. One catches the various planes of the picture rather by finding one more prominent than the next one, and the second more clearly cut than the third, and so on. A well made fuzzygraph has depth. The omni-focograph doesn't.

Composition is merely a sort of intellectualized perspective. It is seeing things in their proper relationships. The most important objects are made most prominent, and those of no consequence are covered up; those which are related to one another are made to cohere, and of two unrelated objects one is suppressed. Diffusion of focus, properly managed, secures this. If the interest centres around Tom and Bertha and the gatepost, it is worse than useless to show all the chairs on the veranda, with the specific number of legs, rungs and rattan strips belonging to each.

Finally and above everything else, the diffused-focus photograph leaves something to the imagination. A Dutchman cannot tell a story because he tells it all. The Yankee tells just enough, and leaves the rest to your imagination. The fuzzygraph must tell something. It must tell enough. But "quantum sufficit." Why put in any more? Shall not the man who sees the picture have some feelings of his own to indulge? The print merely sets his imagination in motion. If it gives it a good start in the right direction it has accomplished the most that any pictorial photograph can accomplish.

The technical micrograph is a different thing. It, too, has its uses. A sharp photograph may have pictorial value, too, but the strange thing is that careful people should miss the positive good points in the so called fuzzygraph.

CANOEING ON THE WINDING CHARLES By Isaac Harris.

Victor Prevost, Photographer, Artist, Chemist

A New Chapter in the Early History of Photography in this Country.

ADDRESS BY MR. W. I. SCANDLIN BEFORE THE PHOTOGRAPHERS ASSN. OF AMERICA.

MR. President, Ladies and Gentlemen: It is seldom in the history of an art no older than ours, that important specimens of its early progress have been wholly lost to sight for a period of fifty years, and still more remarkable that so little is known and recorded in photographic history of the man who probably introduced the wax-paper process into this country, and who certainly left behind him results of surprising beauty and perfection; and who, either satisfied with the results of his labors, or lured into other fields of scientific investigation, apparently dropped out of photographic ken almost as completely as if he had never lived. It is to me a matter of increasing wonderment that such a man could have lived an active life in New York City until so late a date as 1881 and that after a lapse of only twenty years, he could so completely have disappeared.

I have, therefore, a double pleasure in bringing before you to-day what I believe to be some of the most remarkable specimens of early photography in existence, — a double pleasure because I am permitted to place before the most representative body of craftsmen in this country a unique collection of the work of a pioneer, which, notwithstanding the fact that it was made while photography was in its earliest infancy, yet in point of artistic excellence, technical qualities and all-round photographic perfection can hardly be excelled to-day, — and also, because in so doing I am enabled to pay my humble tribute of appreciation to the genius and ability of a man whose accomplishments in the field of photography deserve a much higher meed of praise and recognition than I alone am worthy to bestow; and I hope that before this convention adjourns, some action may be taken in recognition of the results obtained in photography by Victor Prevost in the early fifties.

I would add, that if this association had a permanent place of meeting or a National Gallery of American Photography, I should esteem it a pleasurable duty to present to it a representative collection of these negatives as establishing an important link in the history and development of photography, and as an incentive to further progress.

Before going further, it is important that we briefly compare this collection of Prevost negatives with others of early date in this country, of which we have any knowledge.

There is in the Harvard Library at Cambridge, Mass., a small collection of Talbotype negatives, numbering, I believe, less than a half dozen in all, made by Prof. Josiah P. Cooke in 1847, and measuring not larger than about four by six inches in size; and in the Smithsonian Institution at Washington, the assistant secretary informs me that "the museum contains about twenty paper negatives by the Talbot process, including one made by Mr. Talbot himself, the others being the product of the Langheim Bros. and Mr. Alex. Beckers. These negatives were, as is customary, waxed after the pictures had been made. The collection contains only one negative by the Le Gray process. This is about nine inches by eleven inches and represents a view taken

in New York City showing the studios of Mr. Root and Mr. Brady." This negative originally formed a part of the present collection and at my suggestion was presented to the Smithsonian Institution in 1898, when these negatives were brought to light.

These two collections, together with a few specimens in the possession of Prof. Chandler of Columbia University, are all, outside of the Prevost negatives, of which I have any knowledge.

The collection in my possession numbers considerably over a hundred negatives on paper, made by the Le Gray process, all direct from nature, and measuring mostly ten and one-half by thirteen inches; several, however, are as large as fifteen and one-half by eighteen inches. There are also a number of negatives, copies of paintings, engravings, statuary, etc. Many of these negatives are signed and dated, the earliest ones bearing date of 1851, 1853, 1854 and others.

In almost all cases where the dates appear on these negatives, they have been verified by reference to directories, and in many cases also by the memory of persons still living. In this collection were also a few pieces of the prepared paper, ready for sensitizing, and a few prints, some made on plain and a few apparently on albumenized paper. (The lecturer here showed one of the negatives unframed, with signature and date, a piece of the paper unsensitized, and called attention to several prints hanging on the walls.)

Bearing in mind the date of the first negative in this collection, 1851, let us see what was the condition of photography in this country and in Europe when it was made. The beginning of photography may be credited to Daguerre, and its date named as 1839, as on January 7th of that year he communicated his success to the Academy of Science of Paris. The daguerreotype plate was a positive and not capable of duplication.

On January 1, 1841, Fox Talbot gave before the Royal Society of England, a full description of his process for obtaining, not a positive but a negative, upon paper. This process was patented September 20, 1841, under the name of calotype, and consisted in coating and sensitizing paper and rendering it translucent with wax after development.

In 1846 gun cotton was made known by Prof. Schönbein, of Basel.

In 1847 collodion was first made, by dissolving gun cotton in ether and alcohol, by Mr. Maynard of Boston, Mass.

In 1848 albumen was first employed for making negatives on glass plates by M. Niepcede St. Victor, whose process was published June 14th of that year.

In the autumn of 1849 Frederick Scott Archer first made collodion negatives. Gustave Le Gray of France, had meantime been experimenting along these lines, and published in 1850 a practical treatise on the use of paper and glass. This book is said to contain the first printed notice of collodion being used in photography.

Le Gray's process differed from Talbot's principally in that the paper was waxed before being coated.

Prof. John Towler says, in The Silver Sunbeam (page 171, edition of 1879, London), referring to improvements on Fox Talbot's calotype process: "Amongst all these improvements and extensions, the waxed paper process of Le Gray is the most extensively employed. It presents undeniable advantages in portability of material and liability to fracture; the wax, too, is a decided preservation of organic matter against the action of nitrate of silver.

"It differs from the calotype inasmuch as the paper is waxed before sensitization in Le Gray's proc-

ess, whereas in Talbot's the waxing part of the operation is the last."

Referring to exposure he says: "The time of exposure, of course, is variable, according to temperature and the brilliancy of the light. Two or three minutes in a good light will in general be sufficient; in ordinary light on an average from ten to fifteen minutes will be required."

He tells us that the waxed paper "is ready for use immediately after being sensitized, or at any time within twelve days," also, that the operation of development "may be performed right away or at any time within twenty-four hours." "In extreme cases," he says, "the development may be postponed for a week; but the best results are obtained by developing immediately after exposure."

It was just about this time, 1851, the year in which the first dated paper negative in the collection before us was made, that glass plates and wet collodion were being advocated, and we find in the London Art Journal of about the beginning of 1851 the following item concerning glass plates, from the pen of Robert Hunt:

"They offer such perfect transparency, and manipulation upon them will be found to be really so easy, that we doubt not they will be generally employed. (Photographic Art Journal, April, 1851.)

He also says in a later number of the same publication, about July of 1851, writing of recent improvements in photography: "The use of collodion promises to be of exceeding importance."

A few other extracts from the early photographic press will, I think, be interesting as establishing the importance of the paper process, the permanence and beauty of which you will be able to pass upon yourselves by examination of these negatives to-day.

Le Gray's process, originally presented to the French Academy of Science in 1851, is as follows:

"Keep virgin wax, melted at a temperature of 100 degrees, in a large dish; plunge the paper therein, and let it remain until it becomes completely imbued. Then withdraw it, and, after placing the sheet between several folds of blotting paper, pass over these a moderately hot iron, which effects the absorption of the excess of wax by the blotting paper. A sheet well prepared presents no glossy point upon its surface, and possesses a perfect transparence. This waxed paper is plunged into a hot solution of

Rice water	1,000 grams
Sugar of milk	40 "
Iodide of potassium	15 "
Cyanide of potassium	0.80 gr.
Fluoride of potassium	0.50 "

"After letting it remain half an hour, withdraw the sheet, and dry it by hanging it up by one of the corners. The sheet is then plunged into a clear solution of aceto-nitrate of silver, formed by mixing:

Distilled water	300 grams
Nitrate of silver	20 "
Crystallizable acetic acid	24 "
Charcoal	5 "

"The charcoal renders the paper more sensitive; it discolors the solutions whenever it is used.

"The sheet ought to remain three minutes in this solution; to insure the contact of the liquid, we rub the two surfaces with a brush. The paper is then washed several times with distilled water, and finally perfectly dried between blotting paper.

"After these two preparations the paper may be immediately transferred to the camera. It may be kept without change for more than fifteen days in a dark place. In this respect it presents great advantages over all photographic papers known up to the present time. After the exposition in the camera, it is not necessary to develop the image immedi-

ON THE THRESHOLD. By Addie K. Robinson.

ately with gallic acid. We may wait with impunity until evening, and even until the next day, or the third day. Every one will understand how much this new process facilitates operations in traveling. The solution of the gallic acid is composed of

Gallic acid . . .	1 gram
Nitrate of silver . .	0.5 "
Distilled water . .	200 grams

" The proof, as usual, is fixed with the hyposulphite of soda."

This formula was originally published in La Lumiere, translated and republished in the Photographic Art Journal, February 1852, page 95.

And now, having briefly outlined the waxed paper process of Le Gray, and its important place in the early history and development of photography, we come again to the collection of negatives under consideration and their connection with the present time.

The story of these negatives and their identification is an interesting one, and may be briefly told.

Early in 1898, a friend, Mr. John Rosch of White Plains, N. Y., brought me several of these negatives, which had been given him by a customer, in whose attic they had been stored away untouched for more than thirty years. In moving, they were unearthed and turned over to my friend, Mr. Rosch, from whom in December last, I obtained them.

This gentleman told Mr. Rosch that he had, in the early '50's, conducted or been connected with a private school in New York City, in which school Victor Prevost, the maker of these negatives, was a teacher of drawing and painting. The impression left on Mr. Rosch's mind was that Prevost died some time in the late '50's. The gentleman himself died soon after this interview, his widow moved away, and all source of further information in this direction has, for the present, at least, been lost.

On coming into possession of these negatives, I began a systematic search, in the limited time at my disposal, for more light on the history of the man who had left behind him such remarkable evidences of ability and enthusiasm in the development of an art then in its infancy.

In the Photographic and Fine Arts Journal for February, 1854, I found an editorial mention acknowledging the " receipt of some very fine photographic views of scenes on the North River " from Messrs. V. Prevost and C. Duchochois, with very flattering comments upon the fine taste and great ability of the artists, and in a later issue of the same journal of 1854, another item stating that " M. Prevost is about issuing a most remarkable and valuable work, one that will perhaps command more attention than any thing that has issued from the press for many years. We shall notice it further, on its appearance."

As many of the negatives in this collection are of New York buildings, including business houses, churches, residences and views about the city, many of them numbered in consecutive order, it may reasonably be surmised that it was the artist's intention to publish them, and this may be the work referred to.

The first item, immediately suggested to my mind Mr. P. C. Duchochois of New York — doubtless known to you all through his contributions to photographic literature — to whom I wrote, asking if perchance he could aid me in my investigations, and was much pleased and equally surprised to receive by return mail a letter in which he wrote —

" My Dear Mr. Scandlin: You guessed right, Prevost and I were very good friends; I knew him in Paris, and when I came to New York in 1853 we formed a partnership. Our studio was in Broadway, between Houston and Bleecker streets, pretty far up town then, but we did not succeed to make it pay; the time for photographers was not

yet come, the beauty of Daguerreotype was reigning supreme.

Prevost introduced the waxed paper process in this country, and he and I the albumen and collodion processes.

Not only was he a skillful photographer, and a good painter, but he was also a savant, a professor of physics of no ordinary merit.

I forgot to tell you that some of Prevost's photographs were as large as 18 x 22 inches, made with a 4-inch view lens of Lerebours, which I still have in my possession.

Yours amicably,
(Signed) P. C. DUCHOCHOIS."

This partnership lasted from the latter part of 1853 into the beginning of 1855.

Mr. Duchochois tells me further that Prevost was a pupil of Paul de la Roche, under whom he became proficient as a painter, and of Le Gray, whose process he has so beautifully demonstrated in the work we have here before us; he also tells me that Prevost came to this country about 1850, and remembers that he had at least one child, a son whom he often saw. The New York directories of 1850-1-2-3 locate him as an artist, that of 53-4 as a photographer and those of 55-6-7 as a chemist.

This meagre information was all that I could obtain, but finally, through the columns of a New York Sunday paper I was fortunate enough to learn of a gentleman, who, in his early boyhood had been photographed by Prevost.

Through the courtesy of this gentleman, Mr. Robert J. Hoguet of New York, I finally obtained the address of a son of Victor Prevost himself, who is and has been for a number of years living in New Orleans. From him, in answer to my inquires, I have received the following letter.

"NEW ORLEANS, LA., May 16, 1901.
W. I. SCANDLIN, Esq.,
Brooklyn., N. Y.

Dear Sir:

Your favor 3d instant — My father, Victor Prevost, was born in La Rochelle, France, in 1820, died in N. Y., April, 1881 — 61 years age. Buried in Calvary Cemetery, Brooklyn.

He came to New York in 1848, returned to France in 1853, thence back to N. Y. Was the first photographer established in N. Y. City with C. D. Fredericks at 585 Broadway until 1857.

Then he taught drawing, painting and physics at Mme. H. D. Chegaray's Institute for young ladies.

In 1869 he became principal of the Fort Washington French Institute, 171st St. and King's Bridge Road, Institute for young men. Remained there till 1878, then taught at Institute at Tivoli-on-Hudson until time of his death.

He received first prize and diplomas and medals at American Institute Fair, in N. Y. (Crystal Palace, Sixth avenue, 40th and 42d St.), for excellence of his negatives on waxed paper.

He possessed a most brilliant, versatile mind and was a successful teacher.

Thanking you for your interest in this matter,

Believe me very truly yours,
(Signed) E. E. PREVOST."

This letter forms the last important link in my story of Victor Prevost, up to the present time, though many minor incidents of interest are constantly coming to light in the matter.

OFF APPLEDORE. By E. P. GUILD.

Doctoring Negatives

F. R. FRAPRIE

BE the care and pains ever so great, very few negatives will ever come to the standard designated by the word perfection. In fact perfection in negatives does not exist; a negative which is perfect for silver printing is not so well suited for platinum, and gives very poor results on cyanotype papers. But even if our negatives fall short of what we desire, we can still make good prints from them, and the purpose of this article is to treat of some of the methods by which we can improve our prints.

The most common defect in negatives, perhaps, is the presence of pinholes or scratches. Pinholes are usually caused by dust settling on the plate before exposure. The simplest remedy is prevention; the plates should be dusted, and so should the plate-holders and the camera. But sometimes in spite of these precautions, the shaking incidental to transportation will make dust. Another class of pinholes is caused by air-bubbles sticking to the plate when it is put into the developer. If these are not rubbed off at once, the rest of the plate gets a start which can never be overcome, and a more or less transparent spot will remain on the negative. Then the plate in the developer and the following baths is very soft, and a little carelessness will cause scratches or holes to mar the surface of the gelatine.

All these defects will make ugly black spots in the print if they are left, as they often are, and the pinholes should be spotted out. This is a simple matter. All that is necessary is a camel's hair brush and a stick of India ink or a cake of some opaque watercolor, as burnt sienna. The color should be taken on the brush as nearly dry as possible, and a minute quantity applied to the centre of the spot. It is advisable to support the negative for this operation in such a position that the light shines through it. If a retouching desk is not available, the negative may be held against a window pane, although working is difficult in this position. It is not necessary to fill the spot entirely. A little color in the centre of the hole, even if clear glass shows all around it, is all that is necessary. Such a dot will make the hole invisible at the distance of a foot, and when it disappears from the negative at this distance, it will not show on the print. It will be found, if an attempt is made to fill the hole entirely, that the color prefers to leave the hole and pile up around the edges. So use it as dry as possible, and apply only to the centre of the spot. By working carefully, small scratches can be obliterated in the same way, but for large holes and deep scratches, it will be found necessary to fill the hole in order to get a medium to work on. For this purpose it will be best to flow the negative with retouching varnish and retouch in the regular way with the pencil, or entrust the work to a professional retoucher.

Black spots on the negative are often caused by insufficient motion of the tray during the process of development. This allows particles of developer or alkali to settle on the plate and act more strongly on the places where they lie. Such spots are to be touched out on the print, where they of course produce white spots. For platinum or velox prints the almost dry brush of India ink is again the proper thing, while for gold toned silver prints a cake of sepia or neutral gray will match the color better. It will be found that much better results will be obtained by gently dab-

THE MOTHER. Award First Prize in Plastigmat Contest. By Mrs. Myra Albert Wiggins

bing with the finest possible point than by trying to paint out defects. As soon as the spots disappear to the normal vision sufficient has been done, although it will not seem so if a close inspection is made.

OVER-DEVELOPMENT.

Negatives which have been over-exposed are likely to suffer also from overdevelopment. In this case, although the details may be perfectly visible through the negative, they will often not print evenly over the whole picture; the intensely lighted parts, such as the sky, and bright light-colored masses, will be perfectly blank, or show only feeble detail, when the shadows are properly printed. For this there are several remedies. The most radical is reduction by chemical means, either local or complete. For this purpose we may use Farmer's reducer if additional contrast is not undesirable, as this reducer removes the finer details first. It is made by dissolving potassium ferricyanide, often known as red prussiate of potash, in a small quantity of water, and adding enough to an ordinary hypo solution to color it weak straw color. It is advisable to soak the negative for some time before putting it in this solution. When the reduction has gone far enough,

which may necessitate further additions of the ferricyanide solution, the negative is to be thoroughly washed and dried. When no additional contrast is allowable, instead of the Farmer reducer, it is now usual to use the salt known as ammonium persulphate, which was first introduced to commerce as a photographic chemical some three years ago. Its price was at first high, and the substance was very hard to obtain, but the demand is now so great that there is little difficulty in obtaining it, as all the wholesale drug firms handle it. The principal characteristic of ammonium persulphate as a reducer, (and the statement applies to other persulphates also) is that it does not increase the contrast to such a marked degree as the older methods. This seems to be due to the fact that the salt attacks the denser parts of the negative in preference to the finer tones, and so does not remove the detail. This action was at first much disputed, but careful and repeated experiments have proved that it is true to a great extent. The reason for this has been much discussed, but no universally accepted theory has been arrived at, and the subject is still mysterious.

Whatever may be the mode of operation of the reducer, the manipulation is very easy. In the first place it is necessary that the plate shall be completely free from hypo, and it is advisable that it will not harden, as in that case, the reduction is likely to take place unequally. In order to be sure that the plate is free from hypo, we usually proceed as follows: A five per cent solution of persulphate is made, and it is better to make it fresh each time, although it will keep some time if tightly stoppered in full bottles and kept in a dark place. Enough to cover the plate is placed in a tray, and ammonia is added until the solution is slightly alkaline. This may be told by its turning red litmus paper blue, or by its smelling decidedly of ammonia. Now put the plate in. The persulphate does not reduce at all in an alkaline solution, but does oxidize hypo. After two or three minutes, take out the plate, and add dilute sulphuric acid until the litmus paper turns red again. The solution is now acid and will reduce silver. Immerse the plate, and leave it in until the reduction has proceeded as far as desired. It is very important not to allow the solution to run over the plate irregularly by holding it up for examination, and it is consequently advisable to use a glass tray with transparent bottom for the operation.

When the reduction has proceeded far enough, the plate is to be taken out and immersed immediately in a ten per cent solution of sulphite of soda, which immediately stops the action. The plate is now to be washed and dried.

Other reducers of action similar to this have been recently introduced. Among them are potassium permanganate and sulphuric acid, by Prof. R. Namias, cerium persulphate, by Lumiere Brothers, and ferric sulphate, by Lambert. These all have their advocates, but none of them seem to be really any better or cheaper than ammonium persulphate.

UNDER-DEVELOPMENT.

Perhaps a more common fault than overdevelopment with beginners is underdevelopment. When the image comes up in its beauty on the plate and appears brilliantly on the creamy background of unchanged bromide, and then begins to sink in and be covered up, the inexperienced photographer fears he is losing his prize, and plunges the plate into the hypo. The result is a plate with detail, but so thin as to be unprintable. Here is a case for intensification. There are numerous methods for this, and we will give several, from which a choice can be made.

The plate to be intensified must be

absolutely free from all traces of hypo. It may be treated with alkaline ammonium persulphate, as outlined above, and then washed for an hour, if any doubt exists on this point. For a single solution intensifier, which gives good results, but not permanent plates, we may use the following :

Prepare a saturated solution of bichloride of mercury in water and pour this gradually into a solution of

Potassium iodide . . .	1 1-4 oz
Water	6 oz

until the point is reached when the forming red precipitated will no longer dissolve by shaking, but be very careful not to add more mercury than just enough to make the solution very slightly turbid. Now add one ounce of hypo, dissolve, and add water to make twenty ounces of solution.

For use this should be diluted with about three parts of water. Be careful not to overdo the intensifying. Should it have gone too far, the negative can be reduced by placing it in the fixing bath for a short time. Yellow stains are caused by insufficient fixing or washing before intensification.

Negatives intensified thus will turn

UN PEINTRE DU MOYEN AGE. From an Ozotype. By ALVIN L. COBURN.

yellow all over and become useless in a year or two. A more permanent method, but one which possesses the disadvantage that the amount of intensification cannot be known accurately until the process is complete, is bleaching with mercury and blackening with ammonia. Make solutions.

1

Bichloride of mercury	16 g
Chloride ammonium	16 g
Pure water	600 cc

2

Chloride ammonium	16 g
Pure water	600 cc

Be sure that the plate is free from hypo, as otherwise it will be disfigured by yellow stains after intensifying. Immerse in solution No. 1, and allow it to bleach, observing that the longer it remains in the solution, the greater will be the final density. Wash well and flow over for a few seconds No. 2. Wash again, and immerse in a solution of one drachm strong ammonia water in eight ounces of water, until the white image is darkened through to the back of the plate. Instead of ammonia, a ten per cent solution of sulphite of sodium may be used. When darkened through, rinse well, and set up to dry.

This process gives quite permanent negatives, but it is difficult to tell the exact degree of final intensification during the process. Another intensifier which overcomes this difficulty uses uranium salts. Vogel's process uses three solutions:

1

Uranium nitrate	1 g
Water	100 cc

2

Glacial acetic acid

3

Potassium ferricyanide	1 g
Water	100 cc

Mix in this order; 50 cc No. 1, 10 to 15 cc No. 2, 50 cc No. 3. Lay the plate in the solution until the brownish red color appears sufficiently strong. Then wash ten to twelve minutes in running water. If the intensification is too great, it may be reduced to any desired extent by simply washing, or the color may be entirely removed by dilute ammonia.

A very convenient intensifier is the "Agfa," made in Germany, which may be obtained from the principal stock houses. This is to be diluted with ten parts of water, the negative immersed for about ten minutes and then washed. This preparation, which is patented, consists of a solution of mercuric sulphocyanide and an alkaline chloride.

These methods of reduction and intensification can be applied locally to portions of the negative, by painting carefully with a brush the desired portions. In order to avoid harsh outlines, it is usually advisable to use dilute solutions, and to soften the outlines with water in a clean brush at intervals. Thin parts of negatives can be held back in printing by suitable applications to the back of the negative, as tissue paper, blackened with graphite over the thin parts; or the back of the negative may be coated with gelatine or collodion, which may be painted with yellow dye in the thin parts, or these places may be painted on the film with yellow dye which cannot be removed, however, if afterward desired. Over-dense parts of negatives may easily be printed to the same density as the others in velox papers, by using a small flame close to the desired parts for a longer time than on the rest of the negative. This is not the case with printing-out papers, but the same result may there be secured sometimes by the use of a lens, focussing the sunlight on the dense parts. Many other dodges for improving poor negatives have been suggested, but our space forbids any further mention at this time.

Photography as a Pleasure and Pastime

WM. H. STEELE

THE camera can be made the means of furnishing more real pleasure to its possessor than can be found in any other field of outdoor sports; at the same time it cultivates the finer senses and the habit of observation. It does not depend on the element of physical hardihood for its enjoyment, but will furnish pleasure for the weak or strong, young or old, just as well as for the athelete; which can not be said of any other field sport. It develops a keen eye for the artistic in nature; one who carries a camera on his rambles afield is looking for beautiful bits of landscape and pretty cloud effects.

The mystic alchemy of the dark-room brings the receptive mind into close touch with the great Maker, who has furnished us the woodland, water and the sky, and their ever changing combinations, which give us the material for the beautiful pictures we get.

But dear reader, in order to derive the full measure of pleasure from this pastime, one must enter into it, with the determination of pursuing it intelligently, and not as a mere idle whim. Those who enter the

CHRYSANTHEMUMS. By LILLIA W. NEWHALL.

field of outdoor photography, with the idea of simply making it a time-killer, are destined to disappointment. There are many tedious details that must be mastered before success can be attained, and no pleasure can be derived from the production of poor work; but on the contrary, the nearer we get to perfection the more enjoyment we get from the results of our efforts. To the patient student who is willing to give it time and study, it will be found a never-ending source of pleasure; that can be enjoyed winter and summer, indoors and out.

Now, a word of advice to those who are thinking of taking it up, or to those who have loafed along the way for a few years and are discouraged and about ready to give up. In the first place do not attempt it unless your heart is in the work; this is the first and most important point to settle. After having settled this point, do not go to some dealer immediately and buy a press-the-button camera, as most beginners do. Subscribe for several good amateur magazines; purchase a number of good books, and read up carefully for some time before expending a cent for apparatus of any kind. By this means you will be prepared to know what you want, and whether you want anything or not. If your interest has increased as your study progressed, it will be safe for you to invest in an outfit, and by this time you should be well enough informed to have an idea what you want.

A long focus camera of the folding type is the best general purpose camera, if one is compelled to confine himself to but one.

I have a long focus Wizard, a Hawkeye Tourist and an Al-Vista Style 5-B and that makes a complete outfit. Whatever camera you buy put as much into the lens as your means will allow, as good work cannot be done with a poor lens. Do not load the camera and go into the field snapping here and there promiscuously, depending on accident to secure a picture; artistic work is the result of artistic composition. Beautiful effects can only be obtained by a careful study of light and shade, coupled with good composition and proper exposure. To study these effects intelligently, set up the camera, open the shutter (using a large stop) move it here and there until the view on the ground glass is so arranged as to draw out all the beauties of the scene. Landscapes constitute the poetry of this lovely pastime, and no artist who is in love with the art will waste his or her time and plates on buildings, street scenes, etc., that are at best only records.

I would advise the reading of Robinson's Pictoral Photography by all intending to take up the work; the plain instructions given there for landscape work are easily understood.

In conclusion, while a proper appreciation of the art depends a good deal upon the impressionableness of the artist, with reference to natural scenery; those who are deficient in this, need not be discouraged, as it can be cultivated by study and observation. In this, as in other walks of life; the patient plodder very often excels the talented genius.

By Dr. P. W. Berks.

"Yea, come
Where sun-kissed rivers wind the valley through"

KATZIMO FROM ACOMA.

Katzimo, the En-chanted Mesa

A. C. VROMAN

SIXTH PAPER.

PROBABLY not more than a few hundred people could be found prior to 1897, who had ever heard of the "Mesa Encantada" or enchanted mesa, as it is generally known, or as the natives call it "Katzimo." Yet for more than three hundred and fifty years, it has been known as the "inaccessible rock',' from the chroniclers of Coronado's time, to the Government Survey Reports following the transfer of the country from Mexico to the United States, and other accounts. Bandilier, than whom there is no greater authority on the southwest, says, speaking of the mesa, "a towering isolated mesa with vertical sides several hundred feet in height, utterly inaccessible." (See papers Arch. Institute of America, Am. Series, Vol. IV, page 313.)

Some twelve or fourteen years ago, Mr. Charles F. Lummis, in St. Nicholas, published an article in which he gave the first account of the Acoma tradition. — That, at one time ages ago, the pueblo of Acoma was located on the top of Katzimo, and that one day when all who were able to work were in the fields gathering the harvest, there came a great storm, or cloudburst, and the quantities of water undermined the great ladder rock, the only means of access to the top, and it came down with a mighty crash, leaving two old women, a boy named Achite, and his mother who had been left in charge of the pueblo, on top of the mesa unable to reach the valley. For days afterward, the natives circled around the great rock, but it was never to be their home again, no ladder could be built up so perpendicular a wall. Councils were held and sacrifices were made, but still no way of reaching the top presented itself, and at last it was decided to build a new Acoma, the same we know to-day, three miles to the southwest on a mesa some one hundred and fifty feet lower, yet not unlike Katzimo, and here Coronado in 1540 found the pueblo of Acoma, much as we see it to-day.

Mr. Lummis gives the tradition as it was told to him by one ot the old principales of the pueblo, and verified by others until convinced of its authenticity.

Katzimo is fifteen miles southwest from Laguna, a station on the Santa

THE ASCENT OF KATZIMO. Showing 2nd, 3rd and 4th Shelves.

Fe route sixty-five miles west of Albuquerque, New Mexico, and is best reached from Laguna, where accommodations and conveyance can be had. Cubero station would be some six miles nearer but no conveyance can be had from this point, and beside the pueblo of Laguna is well worth seeing. The mesa can be seen for an instant from the car window at two points, on close watch, between other mesas and buttes just before the train reaches Cubero station.

Katzimo itself is a huge rock rising abruptly from the valley and towering four hundred and thirty-one feet with almost perpendicular walls on all sides, except at one point near the south end where a crevasse has been washed out, perhaps one hundred feet across, leaving a great mass of talus reaching half way to the top of the mesa. Approaching from Laguna you get a first sight from a point nearly five miles away and you do not realize its immensity until you see how long it has taken you to drive by it; you think, a few minutes and it will be out of reach of the camera, but after half an hour you think it is like trouble, always with you.

Standing as it does, an island as it were in the valley, four hundred and thirty-one feet sheer up without a break, it was an ideal place for a pueblo and must have been the envy of the other pueblos, and

the desire of many an exploring party to reach the summit, but the three hundred and fifty year record of "inaccessible," discouraged all until September, 1895. Then Mr. F. W. Hodge of the Bureau of American Ethnology while searching the talus for potsherds, climbed up the crevasse above mentioned, to a point some three hundred feet above the valley, and would then have reached the top; but being alone, having no rope, and realizing the difficulty in getting down from such a place, he gave it up for the time, but determined the next summer to come prepared, and make the ascent. On reaching Washington he had constructed six ladders, six feet each in length, of light material and built so that one section could be slipped in from below and fastened, and then another and another added, and so on until all were in use. Mr. Hodge was detained in Washington the following year however, and did not ship his outfit until 1897, when after witnessing the Snake Dance at Walpi, in August, he would be ready for the mesa.

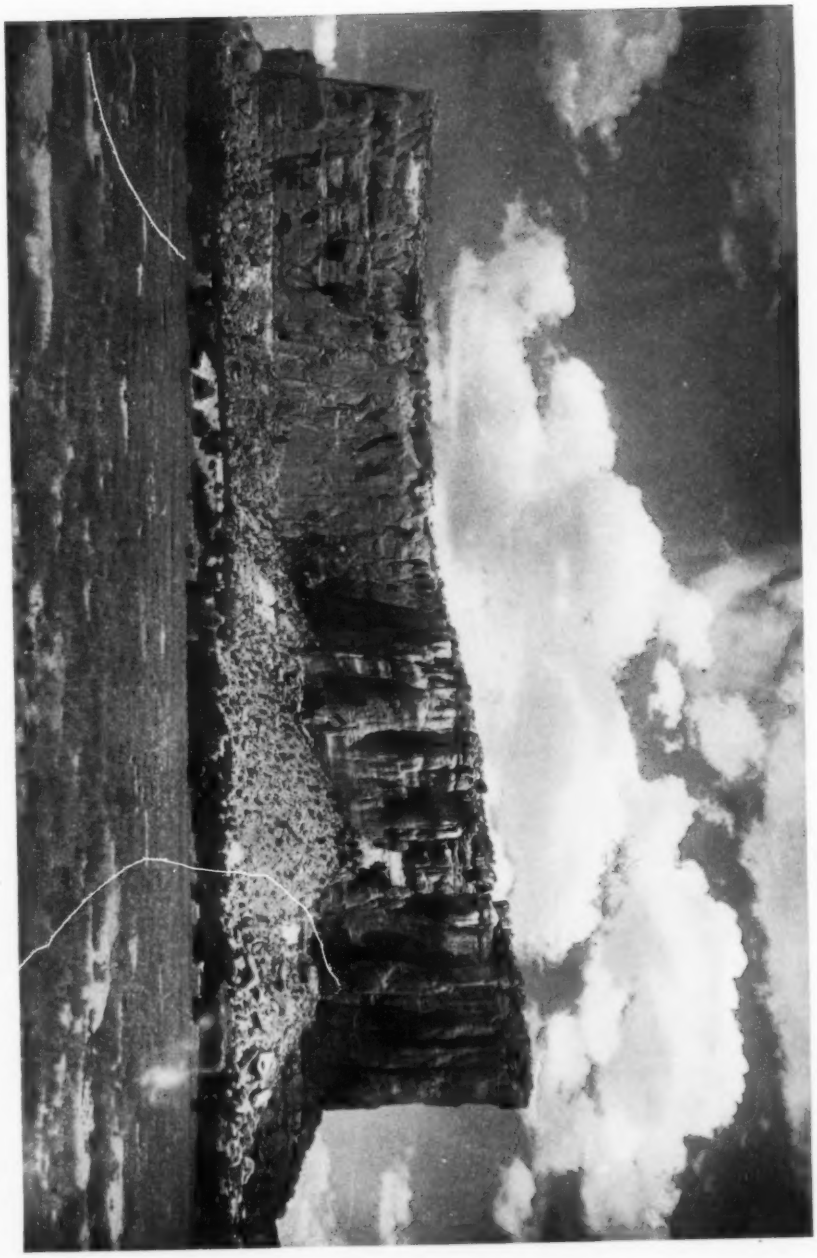
Mr. Hodge was anticipated, however, four or five weeks by Professor Libby of Princeton University, who threw a line over the south point of the mesa by the aid of a small cannon, and after four days hauling of rope at last got over a cable strong enough to support the weight of a man. This was securely fastened at each end and a block and pulley attached where the cable rested on the top of the mesa. Through this another rope ran to the foot of the mesa, and Professor Libby and an assistant were hauled to the top.

The line had been thrown over the south end where it was very narrow and cut off from the larger part by a narrow crevasse some fifty feet deep and four feet across at the top. In order to cross this he was obliged to send to Acoma, three miles distant for a ladder; the four feet might have been jumped easily, but with only a four foot landing place and the chance of a three or four hundred foot fall the risk was too great. By the time the ladder reached him it was so late that only a hurried inspection was made, and he returned to the valley.

Evidently the Professor did not realize the great importance of a thorough search of the summit for evidence of a previous occupation, as in his published report he says there was no evidence that the foot of man had ever trod the top of the mesa before his own. This did not deter Mr. Hodge from carrying out his ideas as to reaching the top, nor his faith in Indian tradition and lore.

Arriving at the foot of the mesa about noon, Sept. 3d, in company with Maj. Pradt, a civil engineer from Laguna, and two others, they pitched camp and at fifteen minutes after one o'clock, each of the four took what he could carry of ladders and rope, photographic outfit, etc. and started

The first two hundred and twenty feet of rise to the top of the talus was comparatively easy, rather up hill and full of large stones, loose rock, etc., but not difficult. Then came a twelve foot wall which with the ladders was scaled without trouble, and which was called the first landing, or shelf; then a rise of about fifty feet on a gradually sloping rock in a distance of perhaps two hundred feet, not difcult, although slippery, but by stringing a rope to pull against one could steady himself and walk right up. We were now right in the crevasse, and hauled all the ladders, rope, and other outfit up to this point, and here real climbing commenced. Splicing three of the ladders together for a perpendicular wall of twenty feet we found an in-



KATZIMO, ENCHANTED MESA, from the West. By A. C. Vroman.

clined smooth surfaced rock which necessitated finger and toe hold, until a rope was stretched for another twenty-five feet, and the third landing was reached. It now began to look a long way down (some two hundred and seventy-five feet) but by fastening a rope to a large boulder and dropping the other end down to the talus we had an alpine line to this point. When the ladders, etc., were hauled to this shelf, which was only four feet wide and possibly twenty long in a semi-circle, it left but little working space, and here Mr. Hodge's idea of constructing the ladder came in good play. On this little shelf, two hundred and seventy-five feet above the valley a long ladder could not have been raised, but by raising one six foot section up and sliding another in, and raising the two and adding another and another until all were in place, giving thirty-six feet of ladder, the next shelf was reached. Not however without some fear and trembling, for the next shelf was a more than perpendicular; overhanging nearly a foot, thus giving but three foot slant to the thirty-six foot ladder, and the first man to go up hugged that ladder about as close as a man could, while the other three held it from going over backward. This was the only really dangerous part of the ascent. After the first one was up, he held the top of the ladder until the next one came up with a rope, when it was tied and there was no further trouble.

The rest of the climb to the summit was almost as easy as some stairways, especially so after a rope had been strung along the face of the rock; and at half past three the entire party stood on the top of Katzimo, "the inaccessible" for more than three hundred years, with a feeling of satisfaction in accomplishing for the first time the real scaling of the Mesa Encantada.

It was soon decided to spend the night on the summit and after the two Indian drivers attached the camp outfit to the rope at the top of the talus, it was hauled up, and that evening the natives of Acoma must have been startled when on top of Katzimo they saw a great fire made from the dead cedars which covered the summit. For once indeed the place might well be called "the enchanted," and early the next morning a delegation of Acoma Indians appeared to investigate the cause, using the ropes that had been run along the trail. At first they appeared very much displeased but soon joined in the search for evidence of a previous occupation.

Mr. Hodge had picked up an arrow point, several pieces of broken pottery and two or three pieces of shell ornament during the evening, and the next morning found several other articles. One of the Indians picked up a broken stone hatchet, arrow points, etc. There was however, no sign of a pueblo ruin in the way of buildings.

There is, or has been, quite a growth of trees on the mesa; but nearly all were dead, probably from lack of soil, which the storms of wind and water destroy, for the wind is as great a reducing agent as the water in the desert country. This is quite significant, for if at one time there was soil enough to mature trees, twelve or more inches in diameter and they are now dying for lack of it, the same cause would remove all traces of adobe buildings, in the centuries that have passed since tradition says the Indians left Katzimo.

Maj. Pradt made a survey and map of the summit, extreme length two thousand seven hundred feet, and four to six hundred feet in width, the north end being the wider; the south end running down to a point; very irregular in outline, with a drop of eight to twenty-five feet from centre to edge and especially at the

south end, where great crevasses three to seven feet deep, have been cut away by the storms of years.

The night was quite chilly and use was found for all the blankets in camp, even with the camp fire. Nothing however disturbed our slumbers except a small animal of some kind in the lunch box. No "enchanted spirits" made themselves known, and they surely would have done so if they had been there, for no white man had ever slept there before. The descent was made in less than an hour with but little difficulty, and I wish it might be the pleasure of all who are interested in the past and this southwest wonderland, to see Katzimo, "the noblest single rock in America," as Mr. Charles F. Lummis has well called it.

THE LAST HUNDRED FEET OF THE CLIMB.

HARVEST TIME.—NEARING THE END. By Marshall P. Cram.

THE CORN-SONG.

Heap high the farmer's wintry hoard!
  Heap high the golden corn!
No richer gift has Autumn poured
  From out her lavish horn!

Let other lands, exulting glean
  The apple from the pine,
The orange from its glossy green
  The cluster from the vine;

We better love the hardy gift
  Our rugged vales bestow,
To cheer us when the storm shall drift
  Our harvest-fields with snow.

Through vales of grass and meads of flower
  Our ploughs their furrows made,
While on the hills the sun and showers
  Of changeful April played.

We dropped the seed o'er hill and plain,
  Beneath the sun of May,
And frightened from our sprouting grain
  The robber crows away.

All through the long, bright days of June
  Its leaves grew green and fair,
And waved in hot midsummer's noon
  Its soft and yellow hair.

And now, with autumn's moonlit eves,
  Its harvest-time has come,
We pluck away the frosted leaves,
  And bear the treasure home.

There, richer than the fabled gift
  Apollo showered of old,
Fair hands the broken grain shall sift,
  And knead its meal of gold.

Then shame on all the proud and vain,
  Whose folly laughs to scorn
The blessing of our hardy grain,
  Our wealth of golden corn!

Let earth withhold her goodly root,
  Let mildew blight the rye,
Give to the worm the orchard's fruit,
  The wheat-field to the fly:

But let the good old crop adorn
  The hills our fathers trod;
Still let us, for his golden corn,
  Send up our thanks to God!

Whittier.

Carbon Printing

Address delivered at New England Photographers' Association

By CHARLES W. HEARN

PHOTOGRAPHERS who are experienced in carbon printing, know full well the beauty and value of carbon pictures, and it is to those who have never made carbon prints that I address myself especially at this time. Many of you will not be aware of how good your negatives are, until you have made carbons from them. This is especially the case, when you are making a strong, but not necessarily an intense negative, as qualities that are lost in a great measure in other printing processes hold up to a wonderful extent when carbons are made; because, in this process more than in any other, the negative is faithfully reproduced in the resulting picture, and if you have not a good picture in this process, then you can rest assured that the negative is faulty.

I will not bring to your notice—as the greatest incentive to making carbons — the fact that every detail in the negative is reproduced in the print, because in these days, it is not always that excessive detail is wanted. On the contrary, when broad effects are desired, this fine detail could, with advantage, be dispensed with; yet the fact remains that it is well to have in your control a printing process where it is possible to have this reserve force at hand, ready to draw upon at will. For this reason, platinum prints are made and preferred, but in many studios, my own with others, both processes are used and are equally necessary. Many whom I have urged to take up carbon work have done so, and after a little trial, have adopted it in their studios and are equally as enthusiastic over it as myself.

Dismiss from your mind the prejudice you have against carbon and carbon printing, caused by impressions you have of its difficulties. These are mostly imaginative and not so in reality.

You have heard of the bad effects of climate, insoluble tissue, blisters, peeling off, etc., and are in a daze over temporary and final support, single and double transfer process, etc., etc., with a whole lot of "don't do this," and "don't do that," till your mind is so imbued with these things that you have magnified beyond all reason the difficulties of this process. It was so in the "old days" of the wet plate process, with the various formulas for collodions, a certain way to make the negative bath, and the best developer for the same to work in harmony with both the collodion and the bath, to say nothing of the albumen paper printing and its difficulties; and yet, as the older photographers here present well know, after the principles of this work were thoroughly understood, the working of these processes was after all, comparatively simple and easy to a careful man.

I do not think I err in saying that carbon printing is really simple, especially single transfer work, and if you will take hold of it, you will be surprised at the quickness with which you have mastered the experimental stages and very soon you will see the value of the work, and in future years we will see more of your work on these walls made in carbon.

I cannot at this time give you more than an insight into the work, mainly wishing to dispel the clouds, by giving you an idea of how the work is produced. I hope at some future meetings of this association, some

provision will be made for a practical demonstration of this process, and I hold myself in readiness if a future occasion permit, to do what I can towards effecting this result.

The carbon tissue as purchased, and which is most generally used in this country, is called the Autotype Co. tissue, made in London and imported by Anthony & Co. of New York and is obtainable through your stock-dealer or direct from New York if you wish. It comes in various tints or colors. I advise you to start with the Warm Black color, as being best adapted for general use. Later on, you could try other colors, some of which are better for certain qualities of negatives. In my own pictures here, this is what I have used, and the transfers were made on toned "etching paper."

The term carbon tissue in the first place is a mystery to you, who at once think of the tissue paper which we use and which we know to be a thin, flimsy paper. When we purchase carbon tissue, we get a thick roll of heavy paper, which is apparently "as thick as a board." The tissue is a gelatin pigment surface, coated upon a thick paper which is removed during its working, leaving a tissue surface of gelatin, which is transferred upon a support. The sensitizing of this carbon tissue is done as follows:

Take 3 ounces of pulverized bichromate of potash and dissolve in 100 ounces of cold water and filter. In hot weather add 1 oz. of 95 per cent alcohol, if it is desired to keep the paper in good condition for a few days. If only wanted to use the next day or two, alcohol is not imperative. Sometimes carbonate of ammonium is used, as well as other ingredients.

The sensitizing is at first best effected by cutting up say 8 x 10 pieces and after completely immersing one in the sensitizing solution previously placed in a suitable size agate ware dish, a soft camels hair brush is lightly drawn several times across the surface of the tissue, to remove any air bells that may form. At first it will refuse to flatten out, but this will be overcome in a few moments. Keep your fingers away from the surface of the paper, as well as out of the solution at all times as much as possible. (In one case it makes finger stains, and at all stages in carbon printing, this should be borne in mind. In the latter case, bichromate of potash is very poisonous and the greatest care should be exercised not to get it in the system. To me, this is the only drawback in carbon printing. Purchase a thin pair of rubber gloves and use them continually while sensitizing and in developing of the prints.)

Sensitize from 2 to 3 minutes by the clock, timing from the first immersion of the paper in the bath. Draw carefully over a rod without stopping, to remove all surplus solution, hang up by clothes nippers to dry, in a dark room, where there is a free circulation of air and no dust or odors.

From the moment the tissue is hung up to dry, until developed, the paper should be kept in the dark, and when dry keep it in a can or light-tight box between dry and clean blotters. Better place chloride of calcium wrapped in paper in the box or can so as to prevent moisture, for a dry atmosphere is necessary for successful working.

Look to it, that the tissue dries in from 4 to 6 hours. If it dries too quickly or the reverse, it renders it more or less insoluble in the working process.

Place a narrow strip of black paper around the edges of your negative, and have the tissue when placed in the printing frame — which is done by artificial light — cover the protected part of the negative to prevent trouble later on in peeling off.

HOLD! INFIDEL. By C. W. Hearn. (Copyrighted.) Salon N. E. P. A., 1901.

This is called a safety edge.

Now you are ready to print, and as the print cannot be judged in the printing, as it has a black or very dark surface to the paper which has not changed in appearance during exposure, it is necessary to have a guide to tell you when it is done.

A good way to do this is to prepare a dozen strips of narrow white tissue paper (1-2 in. wide), each one shorter than another, gum the edges together and place upon a 5 x 7 glass in that size printing frame. Mark plainly each piece of tissue paper at the end 1, 2, 3, 4, etc., up to 12, each number telling you how many thicknesses of paper is thus represented. Number 1, means one thickness, and is the longest piece of paper, number 2 means there are two pieces of paper, etc.

Place a strip of American Aristo platino paper in this frame, shut the frame and lay it aside for the present. This frame is called the sensitometer.

Place another piece of American Aristo paper in the frame containing your negative and place both of the printing frames out to print, in the same printing light, side by side.

Make a light proof of your negative, just touching the high lights, bring both in and note the number showing faintly on the strip of paper in the sensitometer frame. If you for instance can faintly discern the number 8, then 8 is the guide unless you have made your proof too light or too dark, which will be apparent later on. In this case, you can make allowance in making a new proof, or if only slightly faulty, then you can guage what number you wish to show, without making a new print. Experienced printers judge the number wanted, by judging of the quality of the negative, without making the proof, saying at once, this needs 10, or 8, or 9, or 5, as their experience indicates. Carbon tissue is more sensitive than printing out papers and allowance has to be made for this in making the "test proof." A little experience is necessary to tell how long to print the carbon tissue.

The difference between carbon and other printing processes consists in the fact that the carbon tissue when printed must be transferred to some support. When thus transferred and allowed to remain, it is a single transfer and the image is reversed. The picture is more beautiful in this condition, but as it reverses the image it is undesirable in cases where it is necessary to correctly portray the position. It makes the hair appear to be parted on the wrong side, a musical instrument seems to be played with the wrong hand, etc. To correct this a double transfer is necessary, which we will speak upon later.

Place the negative with the carbon tissue upon it and the sensitometer frame out together. When the picture is printed lay it in a weak light in cold water in which the support has been soaked. If the picture is limp, then place the surface of it in contact with the support under water, bringing both out at the same time, the print uppermost. Lay on plain glass or on any smooth hard surface, and squeeze out excess of water and all bubbles so as to make perfect contact, using a stiff rubber squeegee about 6 inches long. Many printers use rubber cloth over the print, as it prevents damaging the carbon tissue. Place between blotters on a flat surface for 15 or 20 minutes by which time the tissue has become firmly attached to the support and is in condition to be developed.

Have plenty of hot water on hand to be used without delay, as required. Now place the picture in its present stage in hot water, about 110°. In about three minutes you will notice that the black or very dark pigment will ooze out between the print and the support.

Take hold of one corner of the print and gently peel off the tissue from the support without stopping. You will find now that the gelatine tissue surface is stuck on the support and the paper backing up the tissue, which until this time had supported it since its purchase, has been removed and is cast away.

You will now see a thick layer of pigmented gelatine on the support left in the hot water, which will gradually dissolve until thoroughly developed. This is assisted by laving the water on the picture with the hand. Add hot water from time to time to keep the temperature up to about 110°. If the print is overprinted, the temperature of the water could be increased, which would result in lightening the print to a great degree, and vice versa. On account of this, there is considerable latitude in the printing, and in careful and experienced hands, about all prints are saved in developing.

You will now notice that the high lights will be washed out; the half tones less and the deep shadows not at all, in perfect reproduction of these qualities present in the negative. This is caused by the light making the tissue insoluble in the water where it has penetrated through the negative; and where the negative is the strongest, of course it was protected pro ratio, by not having the action of the light upon it. You thus see the importance of keeping the sensitized tissue away from the light, as light could easily spoil it before it was even printed.

After developing and rinsing, place the print in a filtered saturated solution of chrome alum for a few minutes. The double object of this, is to harden the film and to dissolve any remaining traces of the bichromate which is very soluble in chrome alum. If the picture is thoroughly developed there will be only a little bichromate left in the print anyhow. Wash the prints a few minutes in clear water and hang up to dry.

This is the end of the single transfer process. When double transfer process is desired, the above process is followed, but using instead a specially prepared support (also prepared commercially for use, and obtained of your stock-dealer) which enables you to re-transfer the dried print, thus giving you the exact pose as made, which as above said, in a single transfer is reversed.

When the print is dry, and in this case, is transferred upon the transfer paper, then it is soaked until limp in the water in which the final support has been prepared. Squeegee as before explained, and then hang up until dry, when it will separate easily by inserting the knife blade at the corner.

This double transfer is the most difficult of the whole process and it is not advisable to attempt it until you have mastered the single transfer process.

The prints are now ready to trim and mount. The above is the process boiled down in brief. In working, it is better to provide yourself with works upon the subject, which give the process more in detail. I refer you to the August 1900 number of the Photo Miniature, and to other works on the same subject as given in that publication.

London Letter

PERCY LUND

HOW often on a club field-day, or when out with a friend, is the remark heard, "Oh, I'll just take this or that to use up my remaining plates." Now I may be a little pessimistic in my judgment, but I fear a very great many of the photographs ordinarily taken are on these lines — "just to use up the plates." It is disappointing, unquestionably, to tramp about for hours and find no subject deemed worthy of a photograph, but this dearth of interest is very rarely experienced. As a general rule there is much worth photographing, indeed in my experience many excellent points of view are passed by unseen at every outing. The fact is that too little time is allowed, and too little patience exercised in choosing the point of view and deciding whether the composition is really worth an exposure or not. We are all given to rushing over the ground far too quickly. Business habits are often detrimental to art — the man who catches the train misses the picture. Of course one must guard against extremes, but the attitude to adopt on a field-day is one of leisurely — but not lazy — observation, to miss no good point of view on the one hand, but to reject many inferior ones on the other. The men who go home with perhaps three or four plates exposed out of a dozen carried are those whose work is most likely to turn out best. Quality is the thing, not quantity. It is very hard, I know, to resist making exposures right and left without troubling to put much mental effort into the business, but whenever this is done the results will be of little value, and the work of a kind that will not live. To accumulate negatives of nothing particular is to merely incommode oneself to no good purpose. One could write a good deal upon the subject of field days or outings and how to make the best use of them. For my own part, I always think that to occupy most of the day in journeying to and from the chosen place, leaving three or four hours for the actual objects, is a great mistake. To arrive about noon and leave again at four o'clock is to miss the best times, early morning and late evening, when shadows are longer and contrasts less glaring. Yet if we look over almost any collection of prints we shall readily recognize that nearly all have been done within an hour or two before or after noontide. My own plan is to stay a night whenever possible, not only for the reasons already mentioned, but also because one becomes more thoroughly acquainted with the place and finds better opportunities for holding conversation with the inhabitants and possibly of securing the co-operation of one or more of them.

The wise photographer will provide himself with a few prints to give away if needed. They often open the way to private grounds, allay the annoyance given to some farmers, and in country districts where photographs are rarely seen, great pleasure is often given by the present of two or three prints.

A practical field-day hint I saw recorded in the columns of one of our journals the other day relates to the accidental breaking of the ground glass. This unfortunate occurrence, which most of us have at one time or other experienced, often places the photographer in an awkward predicament, from which greasy paper etc., will not do much to extricate him. But if he will open one of his slides,

and sacrifice a dry plate, it will do fairly well as a focussing glass. The film must be placed towards the lens.

Apropos of field-days and apparatus, I think that one of these casket or interchangeable lenses is most desirable, and gives a photographer infinite advantages over his fellows who carry only an ordinary lens.

It was, I believe, in an American contemporary, that I first saw the term "poor man's" applied to the combination or casket lens, which is supplied in the form of a flange or brass mount, with iris diaphragm and removable ring for wide-angle adjustment, and several single lenses, that can be screwed at either or both ends, in order to produce different foci. The name is, in my opinion, only fairly appropriate, for the combination lens is undoubtedly the most convenient form for rich and poor alike, apart from consideration of expense. I remember, in my own early photographic days, being counselled to purchase a rapid rectilinear lens, because the front combination could be screwed out, leaving a single lens of approximately double the focal length. I took the advice, but, unfortunately never realized the specified convenience, for my camera stopped short about two inches from the requisite extension. When the combination lens began to be a regular line in the market, I secured one, and since then, in the words of the advertisement, "have used no other." The lenses, employed singly, give one almost every angle required for landscape, the same in various combinations yield rectilinears of various focal lengths, and by removing the ring one may obtain a series of wide-angle combinations. Equipped with a lens of this type, one may go out prepared for anything.

As I have kept to the subject of outings so far, I may as well go on to the end of the chapter.

There is a very useful little appliance to be made by cutting a rectangular hole in a piece of paper or card, about the size of a post card. It is a view-finder. Make the shape and size of the aperture something like this.

Now hold it near to one eye and shut the other. By moving it close to the eye or holdding it a little way off you can view a small or large slice of landscape and turning about select that portion which seems best for your picture. The finder cuts off the surrounding landscape, and prevents the eye being confused with superfluous detail. It can be held upright or horizontally according to circumstances.

And now I will draw this letter to a conclusion, urging every photographer to take as many outings as he can, and study nature in the field. He will reap much benefit for the experience, not only in regard to photography, but in that larger education which is part of the deeper life. These lines of Milton's might have been written in description of the amateur photographer.

"Straight mine eye hath caught new pleasures
While the landscape round it measures;
Russet lawns, and fallows gray,
Where the nibbling flocks do stray;
Mountains, on whose barren breast
The laboring clouds do often rest;
Meadow's trim, with daisies pied,
Shallow brooks and rivers wide;
Towers, and battlements it sees
Bosomed high in tufted trees,
Where perhaps some beauty lies
The cynosure of neighboring eyes."

Foreign Abstracts

Interior Exposures. Dr. Reichert in "Camera Obscura" describes a valuable means for determining the proper time of exposure indoors. For this purpose he uses a strip of any printing-out paper. Half of this is covered, and the other half exposed a convenient time outdoors. It is then brought into the room, and the other half uncovered, and exposed until it reaches the same color as the first half, which of course has been covered meanwhile. The ratio between the two exposures gives the number of times the interior exposure must be that of the proper exposure outdoors, whic h may be determined by any of the known methods, or judged by experience. (Phot. Chronik, 1901 : 340).

Single Toning Bath. The following recipe for a combined toning and fixing bath is said to give good results when ammo nium sulphocyanide bath cannot be used :

Water	1000 ccm
Lead acetate	18 g
Potassium chloride	20 g
Pulverised chalk	15 g
Sodium hyposulphite	275 g

After the solids have dissolved add 0.3 g or 5 grains of gold chloride. Filtering is unnecessary. This quantity of gold will tone about fifty cabinets, and then an equal amount of gold chloride may be added, and fifty more prints toned, after which the bath should be discarded. (Phot. Chronik, 1901 : 340).

Copying Processes. Here are three new recipes for the preparation of baths for coating plain paper :

I.

Sodium ferric citrate	10 g
Potassium oxalate	3 g
Distilled water	50 ccm

To develop this paper we use the following mixture, after adding enough ammonia to dissolve the precipitate formed :

Potassium oxalate	10 g
Silver nitrate	1 g
Distilled water	50 ccm

The picture is cleared with three per cent hydrochloric acid and washed.

II.

Potassium bichromate	1 g
Phosphoric acid, sp. gr. 1.257	5 ccm
Distilled water	10 ccm

For fixing use a solution of :

Pure gallic acid	0.5 g
Distilled water	90-100 ccm
Oxalic acid	0.1 g

In order to obtain a deep black, bathe the print in :

Aniline	40 drops
Benzol	30 ccm

III

Ammonium bichromate	1 g
Glucose	10 g
Distilled water	50-70 ccm

Develop with :

Silver nitrate	1 g
Distilled water	100 ccm
Glacial acetic acid	10 ccm

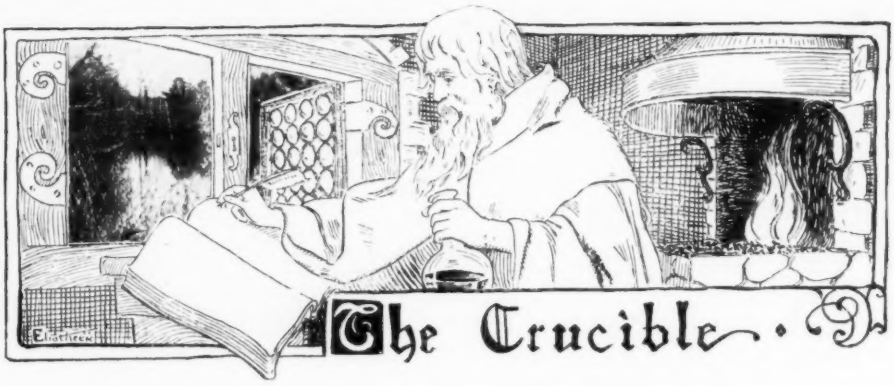
The prints consist of black silver chromate. (Phot. Chronik, 1901 : 382).

Sepia Toning for Bromides. In order to successfully tone a print by this method, it must be made from a very strong negative. Prints from weak negatives are useless, since the contrast between the whites and the shadows of these prints is much smaller than an ordinary bromide print, and the result would be so flat as to be worthless if made from a weak negative. Prints to be toned sepia must be considerably over-exposed. The more this is the case, the more yellow will the prints be;

while by shorter exposure, dark tones are obtained. The prints must not only be overexposed, but also over-developed to a degree depending on the age of the toning bath. The developer is amidol, 25 g; water, 1000 ccm; sodium sulphite, 250 g. No bromide is to be employed unless absolutely necessary, as it interferes with the toning. Other developers do not give as good results. The print is fixed as usual, rinsed slightly, and toned immediately, although if necessary, it can be dried and toned when convenient. The toning bath is very simple and cheap. It consists of water, 1000 ccm; hypo, 300 g; alum, 40 g. These quantities need not be strictly followed. The solution is to be made with warm water, and will be milky, owing to the separation of finely divided sulphur. The print is to be laid in the slightly warm bath; the film will soon be tanned by the alum, and then the temperature may be raised almost to boiling. The heating is essential, as the print will not tone in a cold bath. The toning takes place very slowly, and at the end of half an hour is completed. If the prints have not arrived at the desired color, they must be treated in a fresh bath, as this one is exhausted. Old bath gives more chocolate tones, while new bath gives more yellow tones. A mixture will give intermediate colors. The washing must be exceedingly thorough, and before the prints are dry the surface must be carefully sponged to get rid of particles of sulphur. (Phot. Chronik, 1901 : 101).

Snap-Shots by Night may soon be a matter of course to every possessor of a camera. A new lens has recently been invented by a Dr. E. F. Grun of Brighton, which works far more rapidly than anything yet fixed to the front of a camera. By its means it has been possible to photograph a theatre stage during the performance. A snap-shot of a scene in "Floradora" is reproduced in the September number of The Photogram, in which an interesting account of Dr. Grun's startling instrument is given. Of late years some clever photographers have taken views in town at night by the light only of the street lamps. Not many, however, have the patience to obtain such pictures, for the plate must be exposed for a very long time, and as the best results are obtained on wet nights, the risk of taking cold and contracting rheumatism are by no means slight. But with Dr. Grun's lens an exposure of a few seconds is all that is required. As a matter of fact, one of the views in this number of The Photogram — Brighton Pier — was taken in a quarter of a second. There seems little doubt that, with the attachment of a Grun objective to its lens board, the hand — or stand — camera will enter upon a new era.

Sugar in Developers. Pharmacists have long recognized the tendency of sugar to moderate the greed of reducing agents for oxygen. Thus a solution of ferrous iodide is made fairly stable by conversion into a syrup. The recently noticed retarding action of sugar in the modern developers is doubtless a similar action, and it has its parallel in the addition of common sugar or of saccharoid substances to the iron developer as used for wet plates — a quite common practice in the seventies. Metol, hydrochinon, and most similar developers appear to be made much slower in their action by the addition of sugar, but the ultimate result seems to be much the same as when no sugar is used. Still, slow action is often an advantage, especially where over-exposure is suspected. About twenty per cent of sugar will make the development something like four times as long as usual. (Bull. Soc. Ital., 1901 : 257.



PACKING PLATES. The advantages of backing plates are by no means confined to subjects that would otherwise cause halation, as interiors where the camera must be pointed directly at a window. A backing will improve any plate on which it is used and many of the best photographers in this country and abroad never use an unbacked plate. For the benefit of the few amateurs who do not understand the theory of backing plates, we may say that the rays of light which pass through the film of an ordinary plate and come to the back of the glass, are in large measure reflected there, and re-enter the plate at a different angle, thus causing the blurring of the high lights which is called halation. This fault is seen at its maximum where a brilliantly lighted object is contrasted with a dark part of the picture, and in such cases often causes entire obliteration of outline and detail in the neighborhood of the high lights.

There are various remedies tor halation. One is the use of non-halation plates, which usually differ from ordinary plates in that they are coated twice with the sensitive emulsion, the lower coating being much less sensitive than the upper. In this case, the doubly thick and in part much less sensitive coating absorbs the rays before they get completely through the plate, and the reflection from the back is consequently much diminished. As these plates are necessarily more expenslve than the ordinary variety, they have not come into the general use which they deserve.

A cheaper way is to back the plates with an opaque material which has nearly as possible the same index of refraction as the glass. In this case the light passes out of the glass into the opaque backing, and is there absorbed. If the backing had the same refractive index as the glass, the whole quantity of light would pass out of the glass, No substance is known however, which has the desired property in perfection, but the substance which comes nearest to it, and is most used for this purpose, is caramel. Commercial caramel is often a sticky mass, which does not dry, and for this reason, cannot be used alone. Burnt sienna is often added to make a mixture which will dry enough to prevent daubing the whole apparatus. A typical formula is this:

Mucilage	1 oz
Caramel	1 oz
Burnt sienna ground in water .	2 ozs

Mix well and add two ounces of alcohol. To be painted thickly on with a brush. This must be well dried before the plates are loaded, and is to be washed off with a damp sponge before development.

Commercial caramel is made for its coloring properties, especially for its power of imparting a deep color to liquids. For this purpose it is of no importance whether it dries or not, and it is generally unfitted for backing purposes. The photographer who wants good caramel must make it himself, and we quote from photography a summary of Haddon's classical instructions for doing so.

The material and apparatus required consist of a gas of paraffin stove, an enamelled iron saucepan holding about a quart, a wooden spoon, a thermometer reading up to 250° C., and a pound of white lump sugar.

The sugar is crushed, put in the saucepan on the stove, and steadily stirred. It soon melts, and then begins to froth up, until finally the saucepan will be quite filled. Stirring is kept up, and the temperature carefully watched with the thermometer. The sugar will be found to boil freely at about 220° C., and as soon as that temperature is reached the gas must be turned down so that it is not exceeded. If it is allowed to get hotter, the caramel will be ruined. It must be kept at this point for a quarter of

an hour, when it will be found to get appreciably thicker. Keep on the boiling and stirring for three minutes after thickening is noticed, and then pour out the caramel upon a clean metal metal slab to cool. If all has been done as it should be, it will settle into a perfectly dry, hard, brittle mass.

The caramel is next broken up into small pieces, put into a bottle, a little water added and the whole is put on one side for a few days, when it will be found that the caramel has dissolved, forming a thick treacly liquid. Take ten times the bulk of this liquid in methylated spirit, pour the caramel solution into the spirit, and put on one side for an hour. At the end of that time the caramel will be found in a lump at the bottom of the liquid. The solution is poured off and thrown away, and the caramel which is left behind is dissolved in a mixture of one part of spirit with four of water. It will take two or three days, with occasional shaking, to dissolve, and its adhesion to the glass is improved by adding to the solution so made a little of the solution which has not been precipitated with spirit. There is no need of any further addition whatsoever.

Backing so made may be applied to the glass either with a sponge, a brush, or with a tuft of cotton-wool. It is a mistake to apply too much. Only a little, which can hardly be seen on looking through the plate at the red lamp, will be found nearly, if not quite, as efficacious as a coating a sixteenth of an inch thick, a great deal easier to apply, and much quicker in drying. It will dry in less than twenty minutes, and should dry quite hard, and without the slightest tendency to chip.

REVERSAL OF THE IMAGE

B. C. Roloff in The Bromide Monthly writes, that all of Prof. Nipher's experiments as published in the PHOTO ERA appear to have been conducted with dry plates, but he shows how the same effect, i. e., a direct positive picture formed in the developer without the use of a dark room, can be secured on Rotograph paper exposed directly in the camera.

My own experiments he says, have not extended very far, but they appear to show that a very satisfactory result may be expected if the phenomena be carefully studied.

To begin with, a sheet of Rotograph paper the same size as the plate used in the camera should be first stiffened by being backed with a piece of cardboard cut to size, and inserted in place of a plate in the plate-holder. The exposure may vary greatly, an exposure of ten minutes and one of over an hour producing nearly the same result; but it should hardly be less than ten minutes on an object well lighted by sunshine. After exposure, while transferring the exposed Rotograph sheet from the holder to the developing bath, one may be very careless about exposing to the light. If the camera exposure has been somewhat too short, this careless exposure to light will, in fact, benefit the "print," if such it may be termed.

The developer should be the same as recommended in the directions furnished by the manufacturers, especially the Hydroquinone and the Ferrous Oxalate formulas, diluted with two to four times the quantity of water given, to insure slow development. The development may be proceeded with in a well-lighted room, although too mnch direct light should be avoided. In fact, better results are obtained by commencing development in a half-dark room. A faint negative image may be seen on the paper, which gradually grows stronger in the developer, and when it has strengthened somewhat the dish should be removed to a stronger light.

THE BATHERS. Awarded Second Prize in Plastigmat Contest By HARRY COUTANT.

Notes and News

SUBMARINE PHOTOGRAPHY. It appears that it is now perfectly possible to secure good negatives at a depth of 150 feet, and it is expected that present arrangements can be improved so as to serve for much greater depths. Science will use these processes for researches on the life of submarine animals. Their applications to practical matters may become important. Submarine divers will find their dangerous and tedious business expedited, and the repair of breakages in flooded mines, etc., will be made more easy and safe.

GENEVA, SWITZERLAND. It is frequently remarked how much like each other old married couples have grown. The thoughts and mental operations are held to affect the physiognomy, and the Geneva Photographers Association has recorded in its transactions the results of observations made upon the photographs of seventy-eight pairs of an advanced age. Out of these it is found after a careful examination that fifty-four pairs, a ratio of 60 per cent exhibited a similarity of features almost like that of brothers and sisters though there were no next-of-kin marriages among them. It was the power of thought, the oneness of purpose in life, the parallel lines in which their thoughts flowed and the absence of discord and disharmony in the ordinary ways of their conduct, that had thus moulded their facial expressions in the same cast. "Such is the mighty power of mentality over physicality, and still greater is the power of spirituality over mentality."

ST. PAUL, MINN. The Northwestern Photographers Association, covering the states of Minnesota, Iowa, Wisconsin and the Dakotas, held its annual meeting at St. Paul, Sept. 3-6. The following officers were elected for the ensuing year: President, J. R. Snow, Mankato, Minn.; first vice president, George Kraft, St. Paul; second vice president, J. B. Zwelfel, Duluth; secretary, John Gunderson, Winona; treasurer, W. S. Weeks, Litchfield; vice president of North Dakota, J. A. Huberts, Fargo; vice president for South Dakota, A. Stevens, Butler; vice president for Iowa, E. W. Spurr, Decorah; vice president for Wisconsin, O. G. Swanetz, Manston.

E. Willard Spurr of Decorah, Iowa, took first prizes in all classes in which he exhibited. His photographs were greatly admired by the experienced photographers present, both for technical arrangement and general style. It is noticeable that Mr. Spurr does not carry retouching to an extreme. All characteristic lines are preserved and in his hands seem to add beauty rather than to disfigure the pictured faces. Mr. Spurr has a collection of miniatures that is said to be unrivaled for excellence west of New York.

BURLINGTON, VT. The Lumiere North American Company, a branch of Lumiere & Co. of Lyons, France, manufacturers of photographic dry plates and paper, has purchased the Howard Park in this city, with the intention of locating here.

WASHINGTON, D. C. The photographic office of the War department is still engaged on the pictorial history of the war in Cuba, Porto Rico, and the Philippines, and it probably will be a year or more before the work is completed. The officer who has had charge of the work, Capt. E. A. Root, is shortly to be relieved from the duty at his own request, on account of his ill-health, due to confinement in the workshop of the office.

The department is engaged on a report relating to China, being the history and comment prepared by Captain E. A. Edwards, Twenty-fifth Infantry, now attached to the military information division.

The only picture extant of the charge up San Juan Hill has been sent to the department by Captain Hugh D. Wise, Ninth Infantry. He was a Lieutenant in that regiment during the fight at Santiago, and he carried a camera with him on the firing line.

GUN VS. CAMERA. "People who hunt with guns simply for the sake of the sport," says the Buffalo Commercial, "are giving up that habit more and more, and using the camera. They find in that harmless instrument all the elements that make hunting fascinating, without its cruelty. It is particularly recommended to young people, who, in photographing birds and the smaller wild animals, have all the excitement and amusement that they could wish for, with a healthful and wholly beneficial study of nature. The photographing of cases of cruelty to animals, or of the results of cruelty, is becoming quite common. A snapshot of a case of this kind may often be conveniently taken, and the picture is the best evidence that can be produced in court when the offender is to be prosecuted."

Teaching English with the Camera.

AS showing how valuable the suggestions in the last PHOTO ERA on the teaching of English may be, I propose to detail some of the results of the use of cameras in school work in English. The pupils are in the ninth grade of a school which is on the border line between city and country, so that the pupils have free access both to green fields and crowded streets, a great advantage. The endeavor is that every pupil shall have a camera of some kind; some few own them; some can borrow one of an elder brother or sister, or of some friend; some pupils who have none will pair off with a friend who has, and a very few were purchased from private contributions, these being of a well known pattern which is sold for a dollar. The developing and washing are done in the schoolhouse in the evening, the janitor having consented to the use of the cellar, which is dark enough without any screening of the windows. Consequently we are not troubled by the ventilation of the dark-room, which is an important point when a dozen or more children are watching the developing. This has been done by the teacher usually, but some of the older children try their hand at it occasionally, under proper guidance, and all will very soon. After fixing the plates and films are left all night to wash in a slowly changing tray of water. They are dried the next day, and printed as convenient.

The subjects of the pictures have been rather varied. One of the popular things is to go on a walk at noon. The children bring lunch, and after that is finished, they with the teacher take a walk of a mile or more. Our schoolhouse is on the bank of a river, and one series of pictures, made at intervals, to be sure, was a collection of the different types of vessels sailing up and down, sloops, catboats, schooners, barges, tugs and dredges, with a pile-driver thrown in. This made a very interesting composition. Some of the pupils described the different kinds of vessels, some told where they came from and whither they were bound, some told what the cargoes might be, and their history. Getting interested in seafaring, when an itinerant fishing schooner tied up at the wharf, waiting for herring for bait, the children made an interesting set of compositions about her and her crew. Then they read "Captains Courageous," and got a taste for Kipling unusual in such young children, who do not readily take to his works. The pile-driver going up the river induced us to take a trolley ride Saturday to see a wharf built above us, and there was not a dull paper came in after that trip. Of course we did not have a steady diet of marine pictures; they were scattered through the year, but the boys and girls got a liking for it, and not being able to find any nickel literature except that of the detection of crime, they took to reading Cooper, Marryatt and other nautical authors, whose books they found in the Public Library.

Another means of transportation, the steam and electric cars both just at hand, furnished pictures and material for discussion. A pupil who visited New York secured pictures of horse cars, and although none of the pupils had ever seen them, they found from their elders that such things had once existed in our city. This same scholar lent negatives of the elevated railroad and an automobile, and so we got quite a variety of passenger vehicles.

Another accessory of our school was the brook, which came tumbling down a steep hillside from a millpond half a mile away and over a hundred feet above us. Needless to say, its course was turbulent, especially

after a rainstorm, when it roared down the hill in fury. This gave us many subjects, first and last, both picturesque and geographical. We studied waterfalls, erosion, the formation of a delta and flood-plain where the stream ran through an abandoned mill-pond with a broken dam, and even a landslip after a heavy rain, when a large section of hanging bank came down into the bed of the brook.

One of our favorite haunts was the mill-pond, a picturesque spot which abounded in life of various kinds. In the winter we pictured the lumbermen and the ice-cutters, the skaters and the coasters. In the summer we made some very pretty pictures here, and even tried the photography of bird's nests, using some robin's nests which were close to the ground. We did not disturb the birds seriously, but the nests were so exposed that they never came to maturity.

Many other subjects will occur to any teacher which may be as profitable or more available than those we used. There is no locality which will not yield them. The crowded streets are as fruitful as the country, and we made some excursions to the centre of the city to study its activities and industries. For some historical composition work, some pictures belonging to the High School were borrowed and copied with a long-focus camera, and the negatives turned over to the pupils to print. This could be carried farther to advantage, but it seemed better to us to excite the pupils' interest by having them do work themselves.

The pictures were printed by the pupils on blue-print paper, which we made ourselves at trifling cost. Some were also printed on an architectural paper called Vandyke, which is very cheap in ten-yard rolls, and makes dark-brown prints, which are developed in water and fixed in a very weak solution of hypo. The prints were made at noon, at recess, before and after school, and occasionally in school time, when the need was pressing, but the work was essentially voluntary and outside of regular school hours. The results are a great improvement in English work, due to increased interest, and a greatly increased quickness of perception. There was no intention or attempt to make artistic pictures as the subjects were not usually of a nature to lend themselves to such an attempt. In order to make the work successful, some knowledge of photography and enthusiasm on the part of the teacher are requisite.

WANTED By T. J. Scoggins.

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October.

Come walk with me along the forest ways
This autumn day. What peace is in the air!
The world we look upon is wondrous fair.
—*Rexford.*

The hand of an assassin, has suddenly plunged the nation into mourning for its chief magistrate, William McKinley, perhaps, the best loved President of the Republic since the days of Lincoln and Washington.

"We cannot say, and we will not say
That he is dead — he is just away."

"With a cheery smile, and a wave of the hand,
He has wandered into an unknown land,"

"And left us dreaming how very fair
It needs must be, since he lingers there."

Words, at such a time, are meaningless, inadequate to express, the loss we have suffered, and we shudder with horror at the crime. But while the world mourns with us, "God reigns and the government still lives."

It is our privilege to give, in this issue, the latest and best portrait of the President of the United States, Hon. THEODORE ROOSEVELT.

This hitherto unpublished picture was taken only a few days ago, by the well known photographer Arthur Hewitt of East Orange, N. J., and is probably the best picture extant of our President.

Photo Era Round Robin. Beginning with the November issue of The PHOTO ERA, its scope will be broadened by the addition of several new departments; among which, one of special value, the ***Photo Era Round Robin,*** will be begun.

The aim of the ***Round Robin*** is to raise the standard of amateur photography and, in a way, to offer a good natured protest to existing methods in photographic work. It will interest the beginner as well as the advanced worker. While, as far as possible, all technical terms will be avoided, the directions and explanations will be made so simple and easy of comprehension that like the sun, it will shine for all. The ***Round Robin*** will conduct a ***question box*** for those who desire to make enquiries in regard to their work, and such queries will be answered promptly in the ***Round Robin*** Department, or by mail. Any member may exchange prints through the R. R. ***Photographic Club*** with any other member throughout the country. A ***camera exchange*** will also be established, through which members may make exchanges of photographic apparatus at very little cost to themselves. Notices of both print and camera exchanges will be published in the PHOTO ERA at a nominal charge for members.

Finally, each year the club will hold a ***competitive exhibit,*** and give cash prizes for the best photographs.

There are no fees or assessments and no liabilities. The membership in the ***Round Robin*** is open to all, young and old alike, who are sub-

scribers to the PHOTO ERA. Your only duty consists in sending in your name and address to be enrolled on our books. All circulars and announcements, etc., pertaining to the *Round Robin* will be sent you as published.

Historical Photographs. It seems strange that America has not imitated more extensively the work of the Royal Photographic Record Society of Great Britain, which has as its object the collection of photographs of places and buildings which possess historical or other interest, and are in danger of future change. These photographs are deposited in the print room of the British Museum, where they are accessible to all who desire to use them. At a recent annual meeting, the president's address pointed out that it was impossible to say which photographs, of those they were gathering, would be of most interest or value a generation hence. But all would have a value. What is urgently required is, that a graphic current history of the country shall be formed. Many of the historical buildings in the United States are to-day of very flimsy construction. Every now and then one is destroyed and the memory of how it looked is gone forever. Lacking a national collection, every public library should collect permanent photographs of all places of historical interest in its vicinity. Two years ago such a collection was started at Harvard University, and among the photographs handed in were a series of the gates in the old fence. At that time it seemed likely that the fence would remain indefinitely, and the prints did not appear especially valuable, but to-day the fence has vanished and is replaced by a new brick and iron construction, given by various classes and the prints of the old fence have become of priceless value, because they can never be duplicated.

Every large city in the country has many historical monuments which should be photographed for a permanent collection. The PHOTO ERA desires to form a Photographic Record Association for New England, which shall make a collection of prints to be deposited in some public place, and invites its readers who would be willing to become members of such an association and help the work along, to send in their names. No financial obligation will be incurred thereby, and when a sufficient number respond, steps will be taken to incorporate the association.

"The Camera is the best draughtsman in the world." — Lucius Hitchcock before Photographers of America Convention, Detroit.

Education and Photography. As a result of the first installment of the PHOTO ERA Art Classes published last month, we print in this issue a short article giving briefly the results of some experiments in using photography as an aid to instruction in English in a grade school. These very successful results were obtained by a grammar school master in a city of southern New England, who, while giving us permission to print his paper, prefers that his name be not published.

The importance of this work will not be underestimated by any one having knowledge of the difficulties which are encountered in the teaching of English composition in our elementary schools. Anything which will lighten the difficulties of this task and afford better results than are often obtained now, is worthy the consideration of all serious teachers. We invite correspondence on this subject, and shall be glad to hear from any others who may have used photography in any form in school work.